DEPARTMENT OF THE ARMY

HEADQUARTERS, US ARMY COMMUNICATIONS-ELECTRONICS COMMAND
AND FORT MONMOUTH
FORT MONMOUTH, NEW JERSEY

REPLY TO
ATTENTION OF

September 25, 1986

Safety Office

Ms. Jeanette Eng
New Jersey State Department of
Environmental Protection
Bureau of Radiation Protection
CN 411
Trenton, NJ 08625

Dear Ms. Eng:

On September 9, 1986, you and Mr. William Csaszar performed a close-out radiation survey of the Fort Hancock Neutron Generator Facility located at Sandy Hook, NJ. As you requested during this evaluation, provided at the enclosure is historical information relating to the decommissioned facility.

Pursuant to your close-out survey, request this command be provided with results of your evaluation of the decommissioned facility. The results are to be provided to:

Commander, U.S. Army Communications-Electronics Command, ATTN: AMSEL-SF-MR, Fort Monmouth, NJ 07703-5000.

If further information is needed in this regrad, please contact Mr. Joseph M. Santarsiero or the undersigned at (201) 544-4427.

Sincerely,

STEVEN A. HORNE
Chief, Safety Office

Enclosure

Neutr n Generator Facility
Ft. Hancock, NJ (Sandy Hook)

1. The neutron generator facility was operated in Bldg 539 at Ft. Hancock, NJ. This facility is governed by Nuclear Regulatory Commission (NRC) License No. 29-01022-06. Operation of the neutron generator facility began in 1964 in a World War I coastal defense bunker. Use of the existing heavily walled bunker provided the shielding needed for the experiments.

2. Much of the work done in the facility was classified top priority national defense interests. One unclassified aspect of the work dealt with the determination of vulnerability of Army and Air Force equipment to neutrons. Experiments conducted involved the use of radioactive tritium targets. These targets were bombarded with neutrons from the neutron generator. The room housing the generator was equipped with a ventilation system which exhausted a volume of air equal to the volume of the room out the stack (23 feet high) every two minutes. According to the operation manual for the neutron generator, the maximum amount of tritium released during a target change was 0.0018 millicuries (mCi). The maximum amount of tritium released during an evacuation of the entire accelerator with the ion pump off was 0.035 mCi. Assuming that 0.035 mCi is released, the tritium would be removed from the room by the ventilation system within minutes. The exposure to personnel in the generator room would be significantly below federal standards.

3. In 1975 the U.S. Army transferred custody of the majority of Ft. Hancock to the National Park Service as the Sandy Hook Unit of Gateways National Park. The Army retained custody of Bldg. 539 through a lease with the National Park Service.

4. The last experiment was conducted in the facility in January 1979. The facility was closed down because of a lack of spare parts for the high voltage equipment. The generator remained in the facility until 1982.

5. In January 1985 the NRC conducted an inspection of the former U.S. Army Electronics Research and Development Command (ERADCOM) to include the 29-01022-06 license. The only recommendation they had was to submit a formal copy of the closeout survey to them once decontamination was completed. In June 1985 the U.S. Army Environmental Hygiene Agency (USAEHA) performed a comprehensive ERADCOM inspection. As a result of this inspection there were no recommendations for the facility.

6. Following the disestablishment of ERADCOM on 1 October 1985, CECOM assumed responsibility for the facility. Plans were made to complete the decontamination effort. In October 1985 a comprehensive study was done of the facility. On 12-13 December, the south wall and the contaminated ventilation ducts in it were removed. The ducts and parts of the wall found to be contaminated were placed in radiation waste barrels and shipped to a licensed nuclear waste burial site. Personnel from USAEHA accompanied the team on 12 December and conducted a survey of the facility. Results indicated that there were two localized areas which still slightly exceeded the NRC limit for unrestricted building use.

These levels did not pose any hazard to personnel. The areas were identified, rewashed and resurveyed by CECOM health physicists. Survey results indicated that the areas of concern were below NRC contamination levels.